

REMARKS

Applicants respectfully request reconsideration an allowance of the above-identified patent application. By this amendment, claims 1-27 and 45-55 remain pending, wherein claims 1, 17, and 45 have been amended each of which are the independent describing various embodiments of the present invention.¹

Initially, Applicants and Applicants' attorney express appreciation to the Examiner for the courtesies extended during the recent telephonic interview held on April 5, 2007. The amendments and following arguments submitted in this paper are substantially consistent with those presented during the course of the interview. Applicants also express with appreciation the Examiner's withdrawal of the previous grounds of rejection.

First, the Office action rejects claims 17-22 and 25-27 under 35 U.S.C. § 101 as allegedly being directed toward non-statutory subject matter. In particular, the Office action appears to indicate that the use of the term "if not" for satisfying a condition and not listing the alternative situation of "if" the condition is met in a claim makes the claim an abstract idea per se. Although Applicants do not necessarily agree with such rejection, in the interest of expediting prosecution, Applicants have amended the independent claim 17 to make clear that the condition does not occur.

Next, the Office action rejects all the pending claims under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,668,958 to Bendert et al. ("958"). Applicants respectfully traverse this ground of rejection.

As previously noted, the present invention is generally directed to methods and computer program products for providing a two-phase commit protocol for transactions that occur across a

¹ Support for the claim amendments can be found throughout the specification; for example, support may be found on pg. 19, ll. 8-21.

plurality of databases within a volume. More specifically, rather than providing resource managers that monitor and control the commit phase of a file or resource, embodiments herein provide multiple independent transactional resource managers on a single logical volume, such that each resource manager becomes a unit of storage management defined by the scope of files or resources for which it is responsible. In other words, embodiments provide that each resource manager independently maintains a set of transactional metadata used to guarantee transactional metadata associated with the resources or collection of files that are contained within its scope. For example, the transactional metadata used to guarantee transactional consistency such as a log file, along with files used in a transaction, may comprise the set of files or resources within the scope of control of a resource manager. The resource manager is thus defined by the collection of files for which it is responsible. For instance, the scope may be defined based on such things as a directory hierarchy, a file type, file extension, timestamp within a common time frame, by file size, a tag stored within a file, etc. Note that each resource manager is independent of any other resource manager within the volume such that if a file or resource is within the scope of a particular resource manager, no other resource manager has that same file or resource within its scope.

Claim 1 is directed toward some of the embodiments mentioned above and recites in a distributed computing environment that typically uses a single distributed transaction coordinator to monitor changes to files on a per logical system volume basis, a series of computer programs with computer executable instructions within one or more computer storage medium used to provide a plurality of independent resource managers that operate with respect to transactions, thereby acting as separate units within the volume in order to ensure that operations to one database within the volume do not affect operations of other databases or users of the volume.

The series of computer programs comprises: (1) a logical volume of a file system that includes a plurality of files or resources among a distributed system, wherein one or more of the plurality of files or resources within the file system is controlled by a particular resource manager, which is an object that participates in a transaction and provides a subsystem that implements a transaction-protected resource that monitors and controls changes to files or resources; and (2) a plurality of resource managers maintained on the file system volume, each resource manager independent from one another such that a file or resource monitored and controlled by a particular resource manager cannot be monitored or controlled by any other resource manager from the plurality of resources managers, and wherein each resource manager from the plurality of resource managers has associated transactional metadata and a collection of associated files, wherein the transactional metadata is maintained based on a scope of control set for each of the plurality of resource managers by defining a collection of files or resources based on one or more of a directory hierarchy, a file extension, a file type, a timestamp, a file size, or a tag within the files for which the particular resource manager is responsible in order to allow various options offering different levels of performance, reliability, feature availability, and manageability on a per-resource basis rather than a per volume basis.

Applicants respectfully submit that the '958 does not render the current claim 1 unpatentable for at least the reason that the cited prior art does not disclose (or suggest) each and every element of the independent claims.² For example, the cited '958 reference does not disclose (or suggest) a plurality of resource managers maintained on the file system volume,

² "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131. That is, "for anticipation under 35 U.S.C. 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly." MPEP § 706.02. Applicants also note that "[i]n determining that quantum of prior art disclosure which is necessary to declare an applicant's invention 'not novel' or 'anticipated' within section 102, the stated test is whether a reference contains an 'enabling disclosure.'" MPEP § 2121.01. In other words, a cited reference must be enabled with respect to each claim limitation.

each resource manager independent from one another such that a file or resource monitored and controlled by a particular resource manager cannot be monitored or controlled by any other resource manager from the plurality of resources managers, and wherein each resource manager from the plurality of resource managers has associated transactional metadata and a collection of associated files, wherein the transactional metadata is maintained based on a scope of control set for each of the plurality of resource managers by defining a collection of files or resources based on one or more of a directory hierarchy, a file extension, a file type, a timestamp, a file size, or a tag within the files for which the particular resource manager is responsible in order to allow various options offering different levels of performance, reliability, feature availability, and manageability on a per-resource basis rather than a per volume basis.

The '958 patent discloses a heterogeneous filing system with common API and reconciled file management rules. Although the '958 patent discloses different APIs that control access to different files that they are assigned, the '958 patent does not indicate that these APIs are independent from one another such that only a single API can be used to monitor and control access to a particular file or resource under its control. In fact, col. 7, ll. 31-44 indicates that a client can use the Shared File System (SFS) API to access any file in the Byte File System (BFS) and that a complex set of rules are then used to enforce updates and avoid conflicts. As such, the '958 reference cannot possibly disclose (or suggest) a plurality of resource managers maintained on the file system volume, *each resource manager independent from one another such that a file or resource monitored and controlled by a particular resource manager cannot be monitored or controlled by any other resource manager* from the plurality of resources managers, as recited, *inter alia*, in claim 1.

Nevertheless, during the interview it was expressed that support for the new claim amendment noted above might be found in col. 5 of the '958 patent. Applicants respectfully note, however, that this cited section does not indicate that the two APIs (i.e., the SFS and BFS) are independent from one another, but instead just states how files are typed using containers to determine those files under control of the SFS API as opposed to those *normally* accessed using the BFS API. In fact, the above cited section of the '958 patent makes clear that access to files in the BFS system can be made using the SFS API, *without* ever going through the BFS API. In other words, the BFS API does not have exclusive monitoring and access control to the files defined in its container. Because not all the files under the BFS API are exclusively monitored and controlled thereby (but instead uses a series of rules to commit a transaction and avoid conflicts when the SFS API access files typically under the BFS's control), Applicants respectfully submit that the '958 patent actually "teaches away" from the currently claimed invention. Accordingly, the cited '958 reference does not anticipate or otherwise render Applicants' current claim 1 unpatentable.

The other independent claims 17 and 45 recite methods with similar elements as those argued above with regard to claim 1. As such, these independent claims are also patentably distinguishable over the '958 cited references for at least those reasons stated above with regard to claim 1.

Based on at least the foregoing reasons, Applicants respectfully submit that the cited prior art fails to anticipate or otherwise make obvious Applicants' invention as claimed for example, in independent claims 1, 17, and 45. Applicants note for the record that the remarks above render the remaining rejections of record for the independent and dependent claims moot, and thus addressing individual rejections or assertions with respect to the teachings of the cited art is

unnecessary at the present time, but may be undertaken in the future if necessary or desirable and Applicants reserve the right to do so.

All objections and rejections having been addressed, Applicants respectfully submit that the present application is in condition for allowance, and notice to this effect is earnestly solicited. Should any questions arise in conjunction with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at 1-801-533-9800.

DATED this 25th day of April, 2007.

Respectfully Submitted,

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